

### Remarks

In the Office Action of April 4, 2003, claim 55 was withdrawn from prosecution.

Claims 1-3, 9, 10, 12-20, 31-34, 37-39, 44, 45, 47-49, 53, and 54 were rejected under § 103(a) as obvious based upon U.S. Patent 5,340,479 to Szczepanski et al. in view of U.S. Patents 4,726,901 to Pall et al. and 5,503,745 to Ogata et al.

Claims 6-8, 25-30, and 41-43 were rejected under § 103(a) as obvious based upon the '479 patent to Szczepanski et al. in view of the '901 patents to Pall et al. and the '745 patent to Ogata et al. and further in view of U.S. Patent 5,591,335 to Barboza et al.

Claims 11, 35, 36, and 46 were rejected under 103(a) as obvious based upon the '479 patent to Szczepanski et al. in view of the '901 patent to Pall et al. and the '745 patent to Ogata et al. and further in view of U.S. Patent 5,275,743 to Miller et al.

Claims 50 and 51 were indicated as being allowable if rewritten in independent form.

Applicants appreciate the careful and thoughtful review by the Examiner. It is respectfully submitted that all pending claims 1-3, 6-20, 25-39, 41-54 and 56 are in condition for allowance.

#### **A. Withdrawal of Claim 55**

Applicants reserve their right to pursue prosecution of claim 55 and other withdrawn claims in one or more subsequent applications.

#### **B. Rejection of Claims 1-3, 9, 10, 12-20, 31-34, 37-39, 44, 45, 47-49, 53, and 54 Under § 103(a) Must Be Withdrawn**

The Examiner rejected these claims as follows:

Claims 1-3, 9, 10, 12-20, 31-34, 37-39, 44, 45, 47-49, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szczepanski et al. in view of Pall et al. '901 and Ogata et al. '745.

With respect to claims 1 and 56, Szczepanski et al. disclose a cylindrical filter (see FIG. 6) including at least two layers of a prefiltration layer 70 and a precision layer 69 disposed in the direction of filtration, each layer being formed with a non-woven fabric with the fibers being bonded to each other at their contact points (see lines 63-68 of col. 4), the diameter of the fibers in the precision layer being

smaller than the diameter of the fibers the prefiltration layer. Szczepanski et al. fail to specify the fibers of the prefiltration layer as becoming gradually smaller in the direction of filtration. Pall et al. discloses the concept of providing a prefiltration layer disposed upstream of a precision filtration layer with the prefiltration layer having fibers that become gradually smaller in the direction of filtration (see example 11, columns 19-20) and suggests that such an arrangement provides high filtration efficiency. It would have been obvious to have modified the filter of Szczepanski et al. so as to have included a prefiltration layer arranged as suggested by Pall et al. in order to improve the filtration efficiency of the filter. Szczepanski et al. and Pall et al. fail to specify the fibers as being bonded by heat treatment. Ogata et al. disclose the concept of bonding melt blown fibers of a cylindrical filter by heat treatment method, the filter having fibers that decrease in diameter along a radially inward direction of the filter in either a successive/continuous or step wise manner (see lines 3-11 of col. 4), and suggests that such an arrangement prevents clogging by fluid pressure (see lines 6-31 of col. 5). It would have been obvious to have modified the combination of Szczepanski et al. and Pall et al. so as to have included fibers bonded by a heat treatment method as suggested by Ogata et al. in order to prevent clogging of the filter by fluid pressure.

With respect to claim 38, Szczepanski et al. disclose a cylindrical filter (see FIG. 6) including at least three layers of a prefiltration layer 70 and a precision layer 69, and a support layer 68 disposed in the direction of filtration, each layer being formed with a non-woven fabric with the fibers being bonded to each other at their contact points (see lines 63-68 of col. 4), the diameter of the fibers in the precision layer being smaller than the diameter of the fibers the prefiltration layer, and the fibers in the support layer being larger than the fibers in the precision filtration layer and being bonded together (see lines 63-68 of col. 4). Szczepanski et al. fail to specify the fibers of the prefiltration layer as becoming gradually smaller in the direction of filtration. Pall et al. discloses the concept of providing a prefiltration layer disposed upstream of a precision filtration layer with the prefiltration layer having fibers that become gradually smaller in the direction of filtration (see example 11, columns 19-20) and suggests that such an arrangement provides high filtration efficiency. It would have been obvious to have modified the filter of Szczepanski et al. so as to have included a prefiltration layer arranged as suggested by Pall et al. in order to improve the filtration efficiency of the filter. Ogata et al. disclose the concept of bonding melt blown fibers of a cylindrical filter by heat treatment method, the filter having fibers that decrease in diameter along a radially inward direction of the filter in either a successive/continuous or step wise manner (see lines 3-11 of col. 4), and suggests that such an arrangement prevents clogging by fluid pressure (see lines 6-31 of col. 5). It would have been obvious to have modified the combination of Szczepanski et al. and Pall et al. so as to have included fibers bonded by a heat treatment method as suggested by Ogata et al. in order to prevent clogging of the filter by fluid pressure.

As to claims 2, 17, 18, 39, 49, Szczepanski et al. disclose a prefiltration and precision layers formed of one of polyolefin and polyester fibers (see lines 7-13 of col. 5).

Concerning claims 3, 19, 20, Szczepanski et al. and Ogata et al. disclose a prefiltration layer formed by a melt blow process.

Regarding claims 9, 14-16, 31, 32, 44, 48, Szczepanski et al., Pall et al., and Ogata et al. fail to specify the recited void ratios, however, such a modification would have been obvious in order to optimize the filter for a particular application.

As to claims 10, 33, 34, 45, Szczepanski et al. and Ogata et al. disclose a melt blow process for forming fibers of the precision filtration layer.

Concerning claim 12, Szczepanski et al. disclose non woven fabrics that are different from one another (see lines 41-40 of col. 8).

Claims 13 and 47 recites a process step of making a filter of which carries no weight in an apparatus claim.

As to claim 37, Szczepanski et al. disclose the recited support layer 68.

As to claims 53 and 54, Szczepanski et al. disclose filter layers that are bonded together (see lines 63-68 of col. 4). In addition, Ogata et al. disclose layers that are bonded together.

Pages 2-5 of the April 4, 2003 Office Action.

It is respectfully urged that upon closer review of the cited patents, the Examiner will appreciate the significant differences between the subject matter of the claims at issue and the limited disclosures of the cited patents. First, as explained below, significant differences exist between each of the cited patents and the claims at issue. And second, even if those significant differences are ignored and one attempts to combine the disclosures of the cited patents, it is readily apparent that the resulting collection of disclosures entirely fails to render obvious any of the claims at issue. These matters are explained below.

**1. Deficiencies of U.S. Patent 5,340,479 to Szczepanski et al.**

As described in the Abstract of U.S. Patent 5,340,479, depth filters of Szczepanski et al. are formed from filaments having a first diameter and filaments having a second diameter. In Szczepanski et al., the fiber diameter can be changed only stepwise. Specifically, Szczepanski et al. only teach using "a plurality of...discrete filaments" (see col. 1, lines 9-11) or "one or more layers of discrete filtration filaments of different diameters" (see col. 3, lines 27-30). This is further explained by Fig. 6 of the '479 patent and the description at col. 8, lines 15-31. There, it is noted that each of the layers 68, 69, and 70 is constructed of filaments having diameters that are different than diameters of filaments in other layers. And, this difference in diameters is step-wise or discrete. That is, Szczepanski et al. entirely fail to disclose filaments arranged such that their diameters "become gradually smaller toward the direction of filtration."

In contrast, each of the independent claims at issue, i.e. claims 1 and 38, recites "the diameter of all or part of the fibers constituting said non-woven fabric (or fibrous agglomerates) in said prefiltration layer becomes gradually smaller toward

the direction of filtration.” The ‘479 patent entirely fails to teach this aspect. The Examiner admits this.

Further, if the fiber diameter was changed in Szczepanski et al., the change is made in the lengthwise direction of filters. Change in the radial (filtration) direction of the filters is not taught. Specifically, according to Szczepanski et al. and with reference to the drawings, when a depth filter having two layers is produced, two kinds of melted thermoplastic polymers are extruded through orifices 25, 25 and 42, 42 (Fig. 1), respectively. The extruded polymers are attenuated by gas attenuating mechanisms 28, 28 and 44, 44, respectively, to form continuous filaments. The filaments thus formed are collected on a rotating mandrel 55. As sufficient filaments are built up on the mandrel 55, press roll 56 forces finished filter element 59 off the axial end of mandrel 55 in the direction of arrow 53 (Fig. 2) to produce continuous filter element 59 of an indefinite length (col. 6, lines 34 to 39). Although arrow 53 is not shown in Fig. 2 or other figures, it is apparent that finished filter element 59 is pushed from the right hand side to the left hand side of the drawing to form an indefinite length of a filter.<sup>1</sup>

Accordingly, when two delivery systems 14 and 16 are used in Szczepanski et al., only two kinds of filaments having different diameters are formed, and even when the diameters are changed, the change is expressed only in the axial direction of the mandrel. Thus, the depth filter of Szczepanski et al. is clearly distinguishable from the filters of the claims at issue. That is, a filter comprising a pre-filtration layer in which the diameters of fibers are gradually reduced in the direction of filtration (radial direction) is simply not taught by Szczepanski et al.

## **2. Deficiencies of U.S. Patent 4,726,901 to Pall et al.**

In Pall et al., a nonwoven fibrous mass is collected on a rotating mandrel 16 through a cylindrical forming roll 15 (column 4, lines 1 to 4, column 5, lines 11 to 14, and Fig. 1). The mandrel 16 is reciprocated axially at a rate generally between about 3.0 meters and about 91.4 meters per minute (column 5, lines 44 to 49).

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<sup>1</sup> The correctness of this presumption is supported by the statement in col. 9, lines 39 to 44 that as the filter element is moved axially along the rotating mandrel 55 by the press roll 56 in the direction 57\* (Fig. 2), the filaments 52, 52 are laid and collected on top of the previously collected filaments 51, 51, thereby forming the outer or filtering layer. *\*(Reference numeral “57” seems to be a typographical mistake since “57” is the axis of press roll 56 in Fig. 2.)*

In this process, when the fiber diameter is changed while collecting a nonwoven fibrous mass on a rotating mandrel, as disclosed in Pall et al., fiber diameter and void volume are changed in the lengthwise direction of the filter until a time when the change in fiber extruding conditions is stabilized. In other words, variations in filtration performances in the lengthwise direction of filters occur, and such variations are typically significant.

In contrast, in the filters of the pending claims, fiber diameter is stabilized in the lengthwise direction of the filter and the fiber diameter is changed only in the radial direction of the filter. This results from the fact that a nonwoven fibrous agglomerate is wound about a core uniformly, i.e. at the same time, with respect to the length direction of the filter. That is, during winding, the various regions of the nonwoven agglomerate immediately adjacent a previously wound region underneath, contact that previously wound region at the same time. And so, fiber diameter is stabilized along the length of the filter.

In Examples 47 and 48 of the '901 patent, Pall et al. disclose filters in which the fiber diameter is changed in the radial direction in only the outer 33% (by weight) of the fibrous mass. With respect to the performance of the filters, only one collecting efficiency using 0.3 micrometer of *Pseudomonas diminuta* organisms is described in these examples. However, even when collecting efficiency with microorganisms is good, it is impossible to assume that all aspects of filtration performance such as filtration accuracy, pressure loss, filtration life, and pressure resistant strength are also good.

Furthermore, as stated in claim 1 of the '901 patent, microfibers in the filters of Pall et al. are substantially free of fiber-to-fiber bonding. In sharp contrast, both of the independent claims at issue recite fiber-to-fiber bonding. Claim 1 recites that "at least a part of the fibers are bonded to each other at their contact points by heat treatment." And, claim 38 recites "at least a part of the fibers are bonded by heat treatment." The '901 patent to Pall et al. entirely fails to teach this feature.

### **3. Deficiencies of U.S. Patent 5,429,745 to Ogata et al.<sup>2</sup>**

In Ogata et al., cylindrical filters formed of conjugate fibers consisting of a higher melting point component and a lower melting point component are

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<sup>2</sup> The Examiner's reference to "the '745 patent" to Ogata et al. is believed to refer to U.S. Patent

disclosed. The fiber diameter of the conjugate fibers is varied in the thickness direction of the filter. And the conjugate fibers are melt-adhered at their contact points.

However, none of the cylindrical filters disclosed in Ogata et al. include a precision filtration layer. This is a significant difference from the filters of the present claims. All claims at issue recite this feature. Furthermore, Ogata et al. entirely fail to provide any teachings or suggestions for providing a precision filtration layer in their filters. Moreover, Ogata et al. entirely fail to provide any disclosure or teaching about the specific relation between a pre-filtration layer and a precision filtration layer as well as fiber diameters.

#### **4. Improper Combination of Cited Patents**

Notwithstanding the numerous failings associated with each of the noted patents relied upon for the present rejection, it is also impermissible to combine these patents since (i) there is no motivation or suggestion to make the combinations, (ii) and even if the combinations are magically arrived at, the resulting combination still fails to render any of the claims at issue, obvious. Additionally, yet another reason exists as to why the alleged combination is improper – attempting to make such a combination ignores specific teachings in the cited patents that expressly prohibit such combination. That is, each of the cited patents specifically teaches away from the attempted combination and also from the subject matter of the claims at issue.

Before turning to each of these matters, it is instructive to review the current state of the law as pronounced by the Court of Appeals for the Federal Circuit. It is imperative that in order to properly support a rejection under § 103, the cited references must provide a teaching or suggestion to support the Examiner's assertion of obviousness. Although a prior art device 'may be capable of being modified to run the way [the patent applicant's] apparatus is claimed, there must be a suggestion' or motivation to do so." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). "We do not 'pick and choose among the individual elements of assorted prior art references to recreate the claimed invention,' but rather we look for 'some teaching or suggestion in the references to support their use in the particular

claimed combination.” *Symbol Technologies, Inc. v. Opticon, Inc.*, 935 F.2d 1569, 19 USPQ2d 1241 (Fed. Cir. 1991). “There must be some reason, suggestion, or motivation found in the prior art...[to] make the combination. That knowledge cannot come from the applicant’s invention itself.” *In re Oetiker*, 977 F.2d 1443, 24 USPQ 1443 (Fed. Cir. 1992). In addition, see *Karsten Manufacturing Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 58 USPQ2d 1286 (Fed. Cir. 2001).

And, the Federal Circuit has indisputably held that a reference must be considered as a whole, and portions arguing against or teaching away from the claimed invention must be considered. See *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). Furthermore, “if a first prior art reference [teaches away], then that finding alone can defeat [an] obviousness claim” based on a combination of the references.” *Winner International Royalty Corp. v. Wang*, 202 F.3d 1340, 53 USPQ2d 1580 (Fed. Cir. 2000). “A prima facie case of obviousness can be rebutted if the applicant. . . can show “that the art in any material respect taught away” from the claimed invention.’ *In re Geisler*, 116 F.3d 1465, 1469, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997) (quoting *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). ‘A reference may be said to teach away when a person of ordinary skill, upon reading the reference, . . . would be led in a direction divergent from the path that was taken by the applicant.’ *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.2d 1353, 1360, 52 USPQ2d 1294, 1298 (Fed. cir. 1999). See *In re Haruna*, 249 F.3d 1327, 58 USQP2d 1517 (Fed. Cir. 2001). “We have noted. . . , as a ‘useful general rule,’ that references that teach away cannot serve to create a prima facie case of obviousness. *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130 (Fed. Cir. 1994).

Furthermore, it may in many instances, be improper to combine references if they teach away from each other or contain contradictory or inconsistent teachings. If references taken in combination would produce a ‘seemingly inoperative device,’ we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness. *In re Sponnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244, 56 C.C.P.A. 823 (1969) (references teach away from combination if combination produces seemingly inoperative device); see also *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. cir. 1984) (inoperable modification teaches away).” See

*McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 60 USPQ 2d 1001 (Fed. Cir. 2001).

Turning attention to the specific patents relied upon for the present rejection, it is submitted that upon closer review of this art, and keeping in mind the standards for evaluating obviousness pronounced by the Federal Circuit, it will be appreciated that the rejection must as a matter of law be withdrawn.

First, in contrast to all the pending claims reciting fiber-to-fiber bonding, fibers in Pall '901 are substantially free of fiber-to-fiber bonding and secured to each other by mechanical entanglement or intertwining. No fiber-to-fiber bonding in Pall et al., '901 is repeatedly stated as follows:

"The method of manufacturing the cylindrical fibrous structure of the subject invention comprising the steps of:

- (a) extruding synthetic, polymeric material from...
- (b) cooling the synthetic, polymeric microfibers prior to their collection on the mandrel to a temperature below that at which they bond or fuse to each other to **substantially eliminate fiber-to-fiber bonding**; and
- (c) collecting the cooled microfibers on...in the radial direction..."

"It is preferred,...that cooling of the microfibers be enhanced by the injection of a cooling fluid into the stream of the microfibers prior to their impingement on the mandrel or the forming roll to assist in **eliminating fiber-to-fiber bonding**."

Col. 3, line 55 to col. 4, line 14 (emphasis added).

Again, at column 9, lines 10-15, it is stated:

"The preferred fibrous structure prepared by the method of the subject invention are comprised of a fibrous mass of non-woven, synthetic, polymeric microfibers which are **substantially free of fiber-to-fiber bonding**, secured to each other by mechanical entanglement or intertwining..." (emphasis added)

Finally, at column 10, lines 4-22, it is stated:

"The term "substantially free of fiber-to-fiber bonding", as used herein,... The microfibers are mechanically entangled or intertwined. It is this mechanical entanglement which provides the structural integrity of the fibrous mass portion of the structure. When examined under a microscope...may display random fiber-to-fiber bonding but such bonding is in an amount that would not be significantly detrimental to filter function nor contribute in any material way to the structural integrity of the filter. Additionally, it is possible, by use of tweezers, to separate out fibers which have clean, smooth profiles, free of protuberances and of inseparable clumps of fibers of the type which typically appear on fibers in structures containing substantially fiber-to-fiber bonding."

All of the statements described above undeniably indicate that the **free of fiber-to-fiber bonding is an essential requirement** in Pall et al. The fibers in



the filter element in Example 11 of Pall et al. (cited by the Examiner) are free of fiber-to-fiber bonding.

Thus, Pall et al. which teaches the absence of fiber-to-fiber bonding is clearly distinguishable from the claims at issue which recite fiber-to-fiber bonding.

Further, in the '479 patent to Szczepanski et al., fibers (filaments) forming a filter are thermally bonded to one another. In contrast, in the '901 patent to Pall et al. it is an essential requirement that the filters be free of fiber-to-fiber bonding. That is, Pall et al. teach away from thermal bonding of the fibers in the filter. Pall et al. was distinguished by Szczepanski et al. at col. 2, line 48 to col. 3, line 2. According to Szczepanski et al., their invention is superior to that of Pall et al. (col. 2, lines 58 to 64). In other words, Szczepanski et al. addressed the deficiencies of Pall et al. and denied Pall et al. as a potential method of addressing the problem faced by Szczepanski et al.

As such, it is improper to combine Szczepanski et al. with Pall et al. in an attempt to re-create the subject matter of the claims at issue. Additionally, there is absolutely no suggestion or motivation to combine the teachings of these patents. The Examiner contended that one would have modified the filter of Szczepanski et al. by including the prefiltration layer suggested by Pall et al. However, this argument fails because one cannot selectively pick and choose certain desired passages from the cited art while ignoring others. Pall et al. cannot be relied upon since it expressly teaches away from the claims at issue, and the '479 patent to Szczepanski et al.

Next, in the '479 patent to Szczepanski et al., fiber diameter is not changed along the radial direction of a filter but instead, is changed along the lengthwise direction of the filter. In contrast, in the '745 patent to Ogata et al. fiber diameter is changed along the thickness (radial) direction of a filter. Accordingly, Ogata et al. cannot be combined with Szczepanski et al. Moreover, there is absolutely no suggestion or motivation to combine the teachings of these patents. The Examiner asserts that the combination of Szczepanski et al. and Pall et al. could be modified as suggested by Ogata et al. However, this again, conveniently ignores the repeated and specific teachings by Pall et al. to avoid fiber-to-fiber bonding.

Thus, it is impossible for a person skilled in the art to combine Szczepanski et al. with Pall et al. and/or Ogata et al. to reject the claims of the present application without the benefit of Applicants' disclosure.

For at least these reasons, each of independent claims 1 and 38 is distinguishable over the cited art. And, since claims 2-3, 9, 10, 12-20, 31-34, and 37 all depend from claim 1 and contain all the recitations from claim 1, these claims are also readily distinguishable over the cited art. Moreover, since claims 39, 44, 45, 47-49, 53, and 54 all depend from claim 38 and contain all of the recitations from that claim, these dependent claims are also readily distinguishable over the cited art. Accordingly, it is urged that the rejection must be withdrawn.

**C. Rejection of Claims 6-8, 25-30, and 41-43 Under § 103(a) Must Be Withdrawn**

In support of this ground of rejection, the Examiner argued:

Claims 6-8, 25-30, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szczepanski et al. in view of Pall et al. and Ogata et al. as applied to claim 1, 12, 13, 38 above, and further in view of Barboza et al.

With respect to claims 6, 25, 26, 41, Szczepanski et al. and Pall et al. fails to specify the prefiltration layer as being a mixture of fibers having different melting points. Barboza et al. discloses the concept of providing filtration layers formed of mixtures of fibers having different melting points inherently including a difference in melting point of 10 degrees C or more (see lines 41-65 of col. 7) and suggests that such an arrangement optimizes the filter for particular end-use applications. It would have been obvious to have modified the combination suggested by Szczepanski et al. and Pall et al. so as to have included fibers as suggested by Barboza et al. in order to optimize the filter for a particular end-use application.

Regarding claims 7, 8, 27-30, 42, 43, Szczepanski et al. and Pall et al. fail to specify the layers as having fibers of different diameters. Barboza et al. disclose a filter having layers formed of fibers with different diameters and suggests that the larger fibers provide structural support for the smaller fibers thereby preventing collapse of the layers (see lines 8-23 of col. 7). It would have been obvious to have modified the combination suggested by Szczepanski et al. and Pall et al. so as to have included layers of fibers of different diameters as suggested by Barboza et al. in order to provide filtration layers that were resistant to collapse. Barboza et al. fails to specify the fiber diameter ratios recited in claims 7 and 8, however, such modifications would have been obvious in order to provide the degree of support for a particular application.

Pages 5-6 of the April 4, 2003 Office Action.

U.S. Patent 5,591,335 to Barboza et al. entirely fails to remedy any of the deficiencies of the previously noted combination of the patents to Szczepanski et al., Pall et al., and Ogata et al. The Examiner argues that it would have been

obvious to modify the combination suggested by Szczepanski et al. and Pall et al. as suggested by Barboza et al. However, the Examiner failed to identify any teaching in any of these patents providing the requisite motivation to make the attempted combination.

Barboza et al. is completely different from the subject matter of the claims at issue. In the filter cartridges of Barboza et al., support fibers having a fiber diameter larger than that of filtration fibers do not substantially contribute to the filtration properties of the filter cartridge (column 7, lines 13 to 22).

In contrast, in the cylindrical filters of the claims at issue, a pre-filtration layer and a precision filtration layer co-exist in separate regions divided in the radial direction of the filters. Furthermore, it is not only the precision filtration layer but also the pre-filtration which collectively contribute to the filtration properties of the filters.

Further, in the cylindrical filters recited in claims 7, 27, 28, and 42, the ratio of a smallest diameter to a largest diameter of fibers in the pre-filtration layer is recited as in the range of 1:2 to 1:10. And, in the filters of claims 8, 29, 30, and 43, the ratio of the diameter of fibers in the precision filtration layer to a smallest diameter of the fibers in the pre-filtration layer is recited as in the range of 1:1 to 1:20. None of the cited references teach or even suggest these parameters. When the cylindrical filters of the claims at issue satisfy the features recited in the claims 7-8, 27-30, and 42-43, the pre-filtration layer significantly contributes to the extension of filtration life and filtration properties such as filtration accuracy.

Barboza et al. is completely silent about the characteristics and functions of the pre-filtration layer contained in the filters described in the '335 patent. Moreover, Barboza et al. completely fail to remedy the deficiencies of the '479 patent to Szczepanski et al.; the '901 patent to Pall et al.; and the '745 patent to Ogata et al.

Furthermore, the '335 patent to Barboza et al. cannot be combined with the '901 patent to Pall et al. As previously explained, Pall et al. expressly teach away from fiber-to-fiber bonding. In contrast, Barboza et al. specifically instruct such. It is entirely improper to selectively pick and choose among the cited references in an attempt to re-create the subject matter of the pending claims.

In summary, the subject matter of the claims at issue is not obvious from Barboza et al. and other cited patents even if the combination of the references was possible.

For at least these reasons, it is urged that the rejection must be withdrawn.

**D. Rejection of Claims 11, 35, 36, and 46 Under § 103(a) Must Be Withdrawn**

Concerning this ground of rejection the Examiner asserted:

Claims 11, 35, 36, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szczepanski et al. in view of Pall et al. and Ogata et al. as applied to claim 1 and 38 above, and further in view of Miller et al.

With respect to claims 11, 35, 36, and 46, Szczepanski et al., Pall et al., and Pall et al. fail to specify a precision filter layer formed of glass fibers. Miller et al. discloses the concept of providing a precision filter layer formed of glass (see example 1) and suggests that such an arrangement optimizes the filter for a particular filtering application. It would have been obvious to have modified the combination suggested by Szczepanski et al. and Pall et al. so as to have included a precision filter layer formed of glass fibers as suggested by Miller et al. in order to optimize the filter for a particular application.

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Before turning to the specific deficiencies of the '743 patent to Miller et al., it is important to recognize that this rejection (along with many of the previously discussed rejections) is based upon an improper standard. That is, in making the present rejection, the Examiner contends that "it would have been obvious to have modified the combination [of the cited art]."

No! Such "obvious to try" conclusions have long been prohibited by the Federal Circuit. "[W]e have consistently held that 'obvious to try' is not to be equated with obviousness under 35 U.S.C. 103." *Gillette Co. v. S.C. Johnson & Son, Inc.*, 919 F.2d 720, 16 USPQ2d 1923 (Fed. Cir. 1990). "'[O]bvious to try' is not the standard." *Ecolchem, Inc. v. Southern California Edison Co.*, 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000).

Notwithstanding this flaw associated with the present rejection, the cited art fails to render obvious any of the claims at issue.

The '743 patent to Miller et al. fails to remedy the deficiencies of the '479 patent to Szczepanski et al.; the '901 patent to Pall et al.; and the '745 patent to Ogata et al. Nowhere in the '743 patent does Miller et al. provide the requisite

teaching to properly reject any of the claims at issue. Furthermore, there is no teaching or suggestion in the cited patents to make the attempted combination. The Examiner failed to cite any passages in these patents supporting the attempted combination. Simply put, this ground of rejection must, as a matter of law, be withdrawn.

**E. Claims 50 and 51**

On page 7 of the Office Action, the Examiner stated:

Claims 50 and 51 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

There is no mention of a rejection under § 112 (nor based upon any other grounds) in the Action. It is believed that the Examiner was indicating that these claims would be allowable if rewritten in independent form. Accordingly, amendments are set forth herein to that effect. It is submitted that claims 50 and 51 are in condition for allowance.

**F. Interview**

In the event that the Examiner maintains one or more of the previous grounds of rejection, it is respectfully requested that an interview with Applicants' attorneys be granted.

**G. Conclusion**

It is respectfully submitted that all pending claims 1-3, 6-20, 25-39, 41-54, and 56 are in condition for allowance.

Respectfully submitted,

FAY, SHARPE, FAGAN,  
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A handwritten signature in black ink, appearing to read "Mark E. Bandy", is written over the printed name and address.

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